

CHAPTER 12

Occupational Safety & Health and Environmental Protection Programs

Introduction

Although PrintSTEP does not include OSHA regulations, worker health and safety programs required by the Occupational Safety and Health Administration (OSHA) should also be considered. It is beyond the scope of this document to delineate exact requirements for each OSHA regulatory program. Instead, brief summaries of the major standards and information on current OSHA resource materials and contacts are provided in Appendix A. Note that these are summaries only and should not be used for purposes of determining compliance.

According to the National Safety Council, work-related injuries and deaths cost industry about \$120 billion per year. According to the U.S. Bureau of Labor Statistics (BLS), about 5% of injury and illness cases in all U.S. industries are caused by exposure to harmful substances or environments. Therefore, it is important to lower chemical exposures where feasible. It is also important to review chemicals used in printing operations to ensure that products are acceptable for employee health and safety and the environment.

It is important that workers take advantage of the information on chemicals in their workplace that is provided by material safety data sheets (MSDS). An explanation of the types of information on the MSDS is provided in the following section, followed by an MSDS form. EPA and OSHA both are striving to make sure that this data is accurate, useful and available to workers. For some facilities, MSDSs must also be submitted to the Local Emergency Planning Commission (LEPC), which uses them for emergency planning activities. The information on the MSDS is key to protecting workers, the community and emergency response personnel.

Why Do Environmental and Health & Safety Issues Go Hand-in Hand?

- There are many examples of linkages between environmental and worker health & safety practices. Examples include:
- Appropriate handling practices and procedures for used supplies have a significant impact on worker and environmental protection.

- In an effort to reduce solvent emissions, many printers are investigating chemical substitution with materials that are less volatile (likely to evaporate). However, such an investigation should also consider the toxicity and potential for human health effects of potential replacement products or processes.
- Material data safety sheets are important for worker and environmental protection. An efficient system of receiving, reviewing, cataloging, retrieving, and updating these sheets is a cornerstone to a printing business' chemical hazard communication and control and environmental management programs.
- Hazard Communication, Hazardous Materials Handling, Personal Protective Equipment, and Respiratory Protection programs are some examples of where there is a crossover between environmental and occupational safety and health.

EPA and OSHA are both concerned with protecting human health and the environment. The distinction between them is that OSHA focuses on protecting workers whereas EPA focuses on protection of the community at large. However, many of the control methods and programs are closely related. Both programs recognize that people spend a significant amount of time at the workplace.

- Whenever chemicals contact the outside environment they also usually affect the workplace environment, frequently at higher levels of concentration, with greater potential for impacting human health.
- Some OSHA and EPA requirements are redundant, such as gathering chemical information, spill response, and training.
- Integrating worker and environmental protection can lead to more efficient and better programs.

What if I Need Further Information?

If you don't understand the terms or recognize how they apply to the information here to your operation, you should seek training or assistance from the following:

- Federal OSHA Compliance Assistance Program
- State OSHA Compliance Assistance Program
- State Health Department,
Bureau of Occupational
Health
- Industry trade associations
- Industry labor unions, health
& safety departments
- Occupational health clinics
- University or College-based
occupational safety & health
programs (usually in schools
of Public Health or
Engineering)
- Coalitions on Occupational Safety & Health (COSH groups)

Occupational Safety and Health Program

NH Dept. of Health and Human Services
6 Hazen Drive, P.O. Box 95,
Concord, NH 03302-0095

Health and Safety consultation for small businesses.
Features on-site OSHA assistance, regulatory research,
and workshops.

CONTACT: Stephen Beyer at (603) 271-4646 or e-mail
sbeyer@dhhs.state.nh.us.

OSHA publishes several publications that briefly describe their standards in plain language. Single copies are usually available for free by calling their publications office at (202) 219-4667.

OSHA maintains an extensive website at www.osha.gov. In addition to the full text of all OSHA standards, you can also find news releases, the OSHA office directory, answers to frequently asked questions, OSHA directives, interpretation letters and other publications.

Material Safety Data Sheets

Material Safety Data Sheets (MSDSs) are required for each chemical product found in the workplace including cleaning solvents. They detail a product's properties, and must be kept on file and made available to employees. The information on these sheets includes identification of the hazardous chemicals within a product, any potential physical or health hazards, precautions for safe handling, emergency first aid procedures, required personal protective equipment, and more .

While MSDSs also provide basic environmental information, they should not be viewed as the sole source of this information. Suppliers and distributors are another good source of knowledge concerning the environmental impacts of chemical products in your facility. An MSDS form is provided on the following pages. Sample MSDSs can be found at www.siri.org.

Section I lists general information including the manufacturer's name, address, telephone number, and the chemical trade name of the product. The chemical family name and/or formula may be provided. Also, and most important, this section has the 24-hour Emergency Phone Number to be contacted for additional information about the product in the event of an emergency. This phone number can also be used to obtain environmental information about the chemical product.

Section II provides information on health hazards. Here you can find information on how the chemical may enter the human body, such as by inhalation or skin contact, referred to as routes of exposure, and whether or not it is considered a carcinogen. This section does not provide information on environmental hazards. However, suppliers often present environmental regulatory information in Section II (e.g., a chemical in the product is subject to Section 313 of SARA Title III).

Section III, Physical Hazards, lists reactivity data. It tells whether the material is stable in normal use, lists other incompatible materials, hazardous decomposition products (that may occur when a material is burned), and whether the material is subject to hazardous polymerization (whether it can react with itself in hazardous ways).

Section IV provides emergency first aid procedures.

Section V lists physical characteristics of the material. This includes boiling point, vapor pressure, vapor density (if vapor density is less than 1, vapors will rise; if greater than 1, vapors will sink and collect in low areas), solubility in water, specific gravity (if less than 1 the material will float on water; if greater than 1, it will not float), percent volatile by volume, evaporation rate, and appearance and odor. From the information on volatile organic compounds (VOCs), a facility can calculate emissions from equipment or the facility. This helps the facility determine the level of environmental regulations that apply to them.

Section VI lists any fire or explosion hazards. It includes the flash point (the temperature to which vapors of the material must be heated before a spark or flame will ignite them), the upper and lower flammable limits (the concentration of the material that will burn in air), and what to use to put out the fire. The flash point is one of the factors that is used to determine if a waste is hazardous.

Section VII lists special protection information. Included is suggested respiratory protection and advice on when gloves and/or eye protectors should be worn, and suggestions for ventilation requirements to be used with the material. This section also details the procedures to be taken in case of a spill or other accidental release. Often, this section features the phrase, "dispose of in compliance with federal, state, or local regulations."

Additional sections describing hazardous ingredients of the product or regulatory information may be included. Information may be provided on the permissible exposure limits, or PEL, (also commonly referred to as Threshold Limit Values, or TLVs) of the chemical. The PEL is a limit, set by OSHA, at which an employee can be exposed to a chemical day after day with no adverse effects. Information on other regulations, such as SARA Title III or Department of Transportation restrictions, may be described.

MATERIAL SAFETY DATA SHEET

PRODUCT CODE: **Sheetfed Ink**

MSDS DATE: **March 28, 1997**

HMIS HAZARD RATING: Health = 0

Flammability = 0

Reactivity = 0

SECTION I General Information

Manufactured by: **ABC Ink Incorporated**

Tel (212) 555-1212

100 Main Street

Fax (212) 555-5555

New York, NY 12345

ABC Ink Inc. Product Identification:

Chemical Name: Ink #100

SECTION II Health Hazards

Acute: None

Eye Contact: None

Skin Contact: None

Ingestion: May be harmful if swallowed.

Inhalation: Minor respiratory tract irritation if dust generated

Carcinogenicity: Not listed as carcinogen or possible carcinogen by NTP, IARC, or OSHA

SECTION III Physical Hazards

Stability: Stable Unstable

Materials to Avoid (Incompatibility): Strong acids, strong alkali

Hazardous Decomposition Products: Oxides of carbon; various hydrocarbons, see Fire Data.

Hazardous Polymerization: May Occur Will Not Occur

Conditions to Avoid: Do not heat containers about 250 degrees F.

SECTION IV Emergency and First Aid Information

Eye Contact: N/A

Skin Contact: N/A

Ingestion: Provide emetic. Consult physician.

Inhalation: Remove from area. Consult physician if irritation occurs.

MATERIAL SAFETY DATA SHEET - ABC Ink Inc. (continued)

PRODUCT CODE: Ink #100

SECTION V Physical Data

Boiling Point: >200 deg. C Melting Point: <10 deg. C Specific Gravity: 1.05 +/- 0.04

Vapor Pressure: N/A Vapor Density: N/A Solubility in Water: Negligible

Reactivity in Water: Negligible Appearance and Odor: Faint oil odor, colored paste.

SECTION VI Fire and Explosion Data

Flash Point: >100 deg. C Flammable Limits: LEL = N/A UEL = N/A

Autoignition Temperature: >300 deg. C Extinguisher Media: CO2, Foam, Dry Chemical

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and full protective clothing

Unusual Fire and Explosion Hazards: Possible generation of various hydrocarbons ranging from simple (e.g., methane, ethane) to toxic/irritating gases such as carbon monoxide, acrolein, ketones, and aldehydes.

SECTION VII Protective Equipment/Control Measures

Personnel -

Respiratory Protection: N/A

Eye Protection: Safety glasses

Skin Protection: Not needed under normal usage. If heated, wear goggles, apron and gloves.

Other Protective Measures: None required beyond standard safety practices as applied to any industrial chemical

Handling and Storage -

Precautions/Recommendations: Store below 150 deg. F. Wear safety glasses.

Spill Procedures: Sweep up or scoop up into containers.

Waste Disposal: Dispose of in accordance with all applicable regulations; non-hazardous under RCRA.

SECTION VIII Regulatory Information

HMIS Rating: Health = 0 Flammability = 0 Reactivity = 0

*** Codes - Insignificant Risk = 0; Slight = 1; Moderate = 2; High = 3; Extreme Risk = 4

SARA Title III, Section 313: This product contains no chemicals listed in 40 CFR 372.

DOT Hazard Class: Non-hazardous/Not regulated

Clearance by U.S. Office of Management and Budget (OMB)

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

The OMB Control # for this application form is 2020-0023. The expiration date is October 31, 2004.

The reporting burden is estimated to average 3 hours per printer per year, including time for completing the full application and providing updated information at the end of the first year of the pilot.

You are welcome to submit comments on the Agency's need for this information. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Avenue, NW, Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, D.C. 20503, Attention: Desk Officer for EPA. Include the EPA ICR number (1941.02) and OMB control number 2020-0023 in any correspondence.